

**GENERAL NOTES:**  
Design Specifications: AASHTO - 1996 and Interim thru 2002.  
Panel lengths of channel members shall be attached continuously to a minimum of four posts and a maximum of six posts (except at end bents).  
All bolts, nuts, washers, plates and elastomeric materials are considered as parts of the three beam rail for payment.  
All steel connecting bolts and fasteners for posts and railing, and all anchor bolts, nuts, washers and plates shall be galvanized after fabrication. For protective coating and material requirement of steel railing, see Section 1040 of the Missouri Standard Specifications.  
Rail posts shall be set perpendicular to roadway profile grade and vertically in cross section, and aligned according to Section 713 of the Missouri Standard Specifications, except that the rail posts shall be aligned by the use of shims so that in the final adjustment no part shall deviate more than one inch from true horizontal alignment. The shims shall be 3" x 1-3/4" and placed between the blackout and the three beam rail. The thickness of the shims shall be determined by the contractor and verified by the engineer before ordering material for this work.  
Rail posts shall be seated on elastomeric pads having the same dimensions as the post base plate and 1/16" thickness. Such pads may be any elastomeric material, plain or fibered, having a hardness (Durometer) of 50 or above, as certified by the manufacturer. Additional pads or half pads may be used in the vertical alignment. Post heights shown will increase by the thickness of the pad.  
At the expansion slots in the three beam rails and channels, tighten bolts, back off one-half turn and burr threads.  
At the three beam connection to blackouts on wings, tighten bolts, back off one-half turn and burr threads.  
Minimum length of three beam sections is equal to one post space.  
Use 5/8" x 6" button-head, oval shoulder bolts with hex nuts at all slots (thickness of hex nuts = 3/8" min.).  
Three beam guard rail on the bridge shall be made of steel and shall be 12 gage.  
Posts, cap rail angles, base plates, channels and channel splice plates shall be fabricated from ASTM A709 grade 36 steel and galvanized.  
Washers shall be used at all post bolts (between the bolt head and beam). They shall be rectangular in shape (3" x 1-3/4" x 3/16" min.) and flat with a 1/16" x 1" slot, or when necessary, of such design as to fit the contour of the beam. (Use a 3" x 1-3/4" x 5/8" rectangular washer between the blackout and the three beam rail.)  
Special drilling of the three beam may be required at the splices. (All drilling details are to be shown on the shop drawings.)  
Fabrication of structural steel shall be in accordance with Section 712 of the Missouri Standard Specifications.  
Expansion splices in the three beam rail shall be made at either the first or second post on either side of the joint and on structure at bridge ends. When the splice is made at the second post, an expansion slot shall be provided in the three beam rail for connection to the first post to allow for movement.  
In addition to the expansion provisions at these expansion joints, expansion splices in the three beam rail and the channel shall be provided at other locations so that the maximum length without expansion provisions does not exceed 200 ft.  
Shim plates 6" x 6" x 1/16" may be used between the top of the second post and the channel member as required for vertical alignment.  
See slab sheet for rail post spacing.  
See Missouri Standard Plans drawing 606.00 for details not shown.  
For Part Plan B-B, see Sheet No. .

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COUNTY THB 1A